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## Appendix D: Customer supplied power equipment

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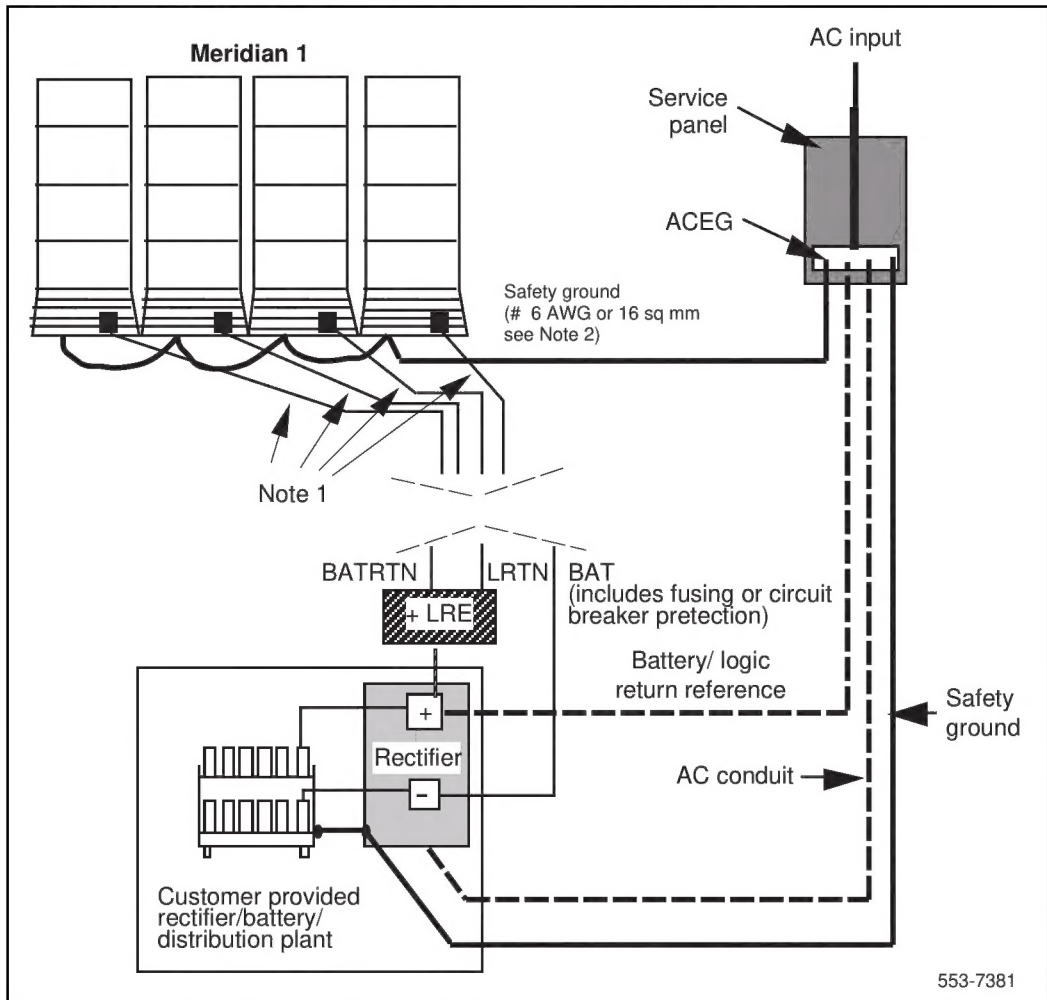
For customers decide not to use Northern Telecom Power, Battery Back up or Distribution equipment, this appendix provides the following

- recommended grounding practices (strongly recommended)
- recommended alarm signals, which should be fed from customer power equipment to Meridian 1
- recommended power equipment features

### System grounding and interconnection to Meridian 1

[Figures 195](#) and [196](#) show the recommended method of grounding customer equipment.

**Figure 195**  
**Grounding and interconnection of customer Power equipment**  
**to Meridian 1 using NT LRE**



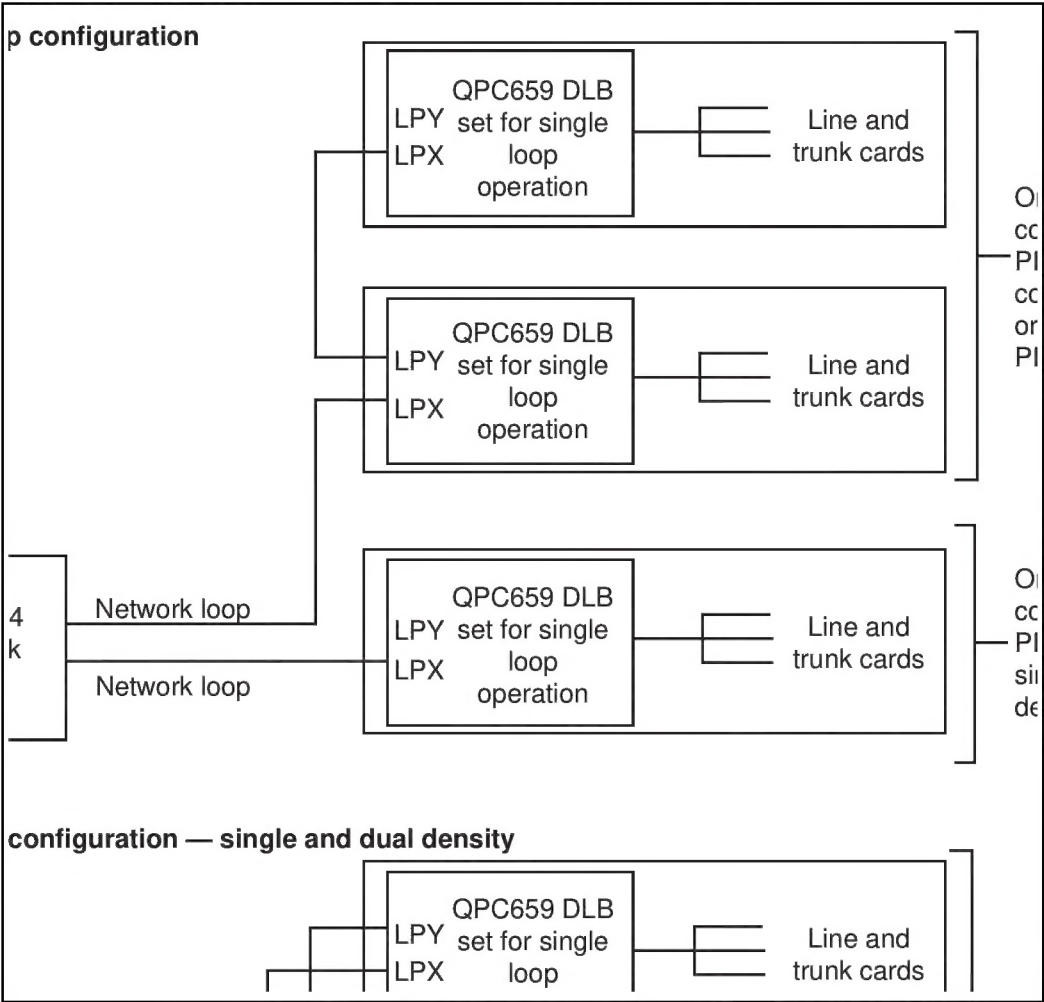
**Note 1:** DC power feeds to Meridian 1 pedestals. Each feed consists of two BAT (–), two BATRTN (+), and one LRTN conductors. If required the conductors can be run in conduit.

**Note 2:** With customer provided power equipment, the Meridian 1 frame requires a safety ground direct connection to the ACEG.

**Note 3:** The purpose of the LRE (logic return equalizer) is to provide a busbar where the logic return wires from different columns in a multiple column system are consolidated before connecting to the single point ground. The NT6D5303 large LRE is available from Northern Telecom for this purpose and is shown in [Figure 195](#).

**Note 4:** Customers may also provide their own LRE within the power equipment for consolidation of logic return wires. This LRE must be connected to the Positive bar in the power equipment. The combined LRE/Positive bar must be connected to the single point ground, which is usually the AC Equipment Ground (ACEG) in the AC service panel. This configuration is shown in [Figure 196](#).

**Figure 196**  
**Grounding and interconnection of customer Power equipment**  
**to Meridian 1 using customer LRE**



**Note 1:** DC power feeds to Meridian 1 pedestals. Each feed consists of two BAT (–), two BATRTN (+), and one LRTN conductors. If required the conductors can be run in conduit.

**Note 2:** With customer provided power equipment, the Meridian 1 frame requires a safety ground direct connection to the ACEG.

## Power feed distribution

The customer should provide adequate fusing or circuit breakers in the power equipment that supplies the Meridian 1. The fuses or circuit breakers should be rated at 30 A for every two Meridian 1 modules.

For more information about connections to Power Distribution Unit in Meridian 1 pedestal, see Appendix A.

## Recommended signal connections to Meridian 1 System Monitor

Several signal connections should be supplied from the customer power equipment to connector J4 on the NT8D22 system monitor located in the Meridian pedestal. These signal are as follows:

### Alarm signal

This signal is normally an open circuit. It is grounded in the case of AC input voltage failure to the power system (resulting in the power system going on battery back up). This signal will activate the Meridian 1 cabinet LED and cause a CPU alert, which will then be registered on monitoring terminals. The alarm signal is pin 5 on connector J4 on the NT8D22 system monitor.

### Trip signal

If the customer supplied equipment is not configured with a Low Voltage Disconnect feature that disconnects power to the load after severe discharging of the batteries, then this Trip signal may be used to trip the Meridian 1 circuit breakers and initiate a line transfer.

**Note:** If the customer power system is fitted with internal Low Voltage disconnect for battery protection, then this signal should not be used.

Typically a disconnect voltage is 42 Volts DC, to provide adequate protection of batteries. When the AC input voltage returns and the batteries are sufficiently recharged, the Meridian 1 power can be restored by switching the Meridian 1 circuit breakers.

The alarm signal is pin 7 on connector J4 on the NT8D22 system monitor. This signal is normally open circuit and is grounded when the Trip signal is activated.

The NT8D46AW cable may be used for providing both Alarm and Trip signals.

For more information, see Appendix A.

## **Recommended features on customer supplied power equipment**

### **Current and Voltage Meters**

Customer supplied power equipment should be fitted with meters, either analog or digital, to allow monitoring of both output voltage and output current.

### **Visual and Audible Alarms**

Customer supplied power equipment should be fitted with visual alarms for the following fault conditions:

- Distribution Fuse or Distribution Circuit breaker trip
- AC Power Fail
- Individual Rectifier fail

Audible alarms may also be provided.

## **Batteries**

To install reserve power equipment (batteries) the installer should follow the instructions provided with the equipment. The batteries shall be connected to ground by the connection of one battery terminal (typically the positive terminal) to the Single Point Ground.

Preventative maintenance as outlined in the battery manufactures installation guide must be carried out on a regular basis and the results logged.

## **UPS or Auxiliary Generator**

When installing UPS equipment, follow the manufacturers documentation carefully. The UPS equipment must be grounded to the ACEG or the Building Ground Reference.